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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/816,148 | 03/26/2001 | E. D. Thomas III | N.C. 79,597 | 7420 |

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Code 1008.2, Naval Research Laboratory
4555 Overlook Ave., S.W.
Washington, DC 20375-5320

EXAMINER

ODA, CHRISTINE K

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2858

DATE MAILED: 02/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/816,148

Applicant(s)
Thomas III et al

Examiner
Christine K. Oda

Art Unit
2858



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Nov 13, 2002
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of:

- ☐ Certified copies of the priority documents have been received.
- ☐ Certified copies of the priority documents have been received in Application No. _____.
- ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) ☐ The translation of the foreign language provisional application has been received.

- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 7
- ☐ Interview Summary (PTO-413) Paper No(s). _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

Art Unit: 2858

Part III. DETAILED ACTION

EXAMINER'S RESPONSE

Status of Application.

1. In response to the applicant's amendment received: November 13, 2002. The
5 examiner has considered the new presentation of claims and applicant arguments in view
of the disclosure and the present state of the prior art. And it is the examiner's opinion
that claims are unpatentable for the reasons set forth in this office action:

INFORMATION DISCLOSURE STATEMENT

2. Applicant has submitted a duplicate of IDS dated March 26, 2001, thus all of the
10 documents have been crossed out. Regarding 5,466,639, applicant states on page 6 of the
response that the incorrect patent had been submitted, and alleges a copy of the correct
patent, 5,466, 369 is submitted herewith. However, Applicant resubmitted the same
reference, namely Patent No. 5,446,369. Also, Applicant has not corrected the IDS
regarding the date, name, class and subclass to Patent No. 5,466, 369. This listed
15 information corresponds to Patent No. 5,466, 369. Applicant is asked to provide a copy
of the reference, a listing of the correct reference number, date, name and class, subclass.

SPECIFICATION

3. The disclosure is objected to because of the following informalities:
- A. page 3, line 10, "The the";
- 20 B. page 12, line 5, "half-cells s supply..." needs correction
4. The lengthy specification has not been checked to the extent necessary to
determine the presence of all possible minor errors. Applicant's cooperation is requested
in correcting any errors of which applicant may become aware in the specification.
Appropriate correction is required.

25

CLAIM OBJECTIONS

Although Applicant's Claim(s) meet the requirement of 35 U.S.C. §112 second
paragraph, i.e. the metes and bounds are determinable:

Art Unit: 2858

5. Claim 31 is objected to under 37 C.F.R. §1.75, because Claim 31 depends upon itself. For the purposes of examination, the examiner assumes that Claim 31 is dependent upon Claim 30.

It is in the best interest of the patent community that applicant, in his/her normal review and/or rewriting of the claims, to take into consideration these editorial situations and make changes as necessary. Appropriate correction is required.

CLAIM REJECTIONS - 35 U.S.C. §102

The following is a quotation of the appropriate paragraphs of 35 U.S.C §102 that form the basis for the rejections under this section made in this Office action.

10 A person shall be entitled to a patent unless --
(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in
15 the United States.
(f) he did not himself invent the subject matter sought to be patented.
(g)(1) during the course of an interference conducted under section 135 or section 291, another inventor involved therein establishes, to the extent permitted in section 104, that before such person's invention thereof the invention was made by such other inventor and not abandoned, suppressed, or
20 concealed, or (2) before such person's invention thereof, the invention was made in this country by another inventor who had not abandoned, suppressed, or concealed it. In determining priority of invention under this subsection, there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

25 6. Claims 1-35 are rejected under 35 U.S.C §102(a) as being clearly anticipated by "Comprehensive Monitoring and Evaluation of Ballast Tank Coatings Integrity for Life Prediction and Condition Based Maintenance" Lucas, et al. See Figs. 1, 2 and 3.

7. Claims 1-35 are rejected under 35 U.S.C §102(f) and (g). Applicant is asked to clarify any ambiguity created by the above article regarding inventorship. The article
30 names K. E. Lucas, P. F. Slebodnick, E. D. Thomas, E. A. Hogan and A. I. Kaznoff as authors of the article, while the application names K. E. Lucas, E. D. Thomas, P. Slebodnick and E. A. Hogan as inventors. See M.P.E.P. 2137-2138.06.

8. Claim 8 is rejected under 35 U.S.C §102(b) as being anticipated by Kenda (5,547,311).

Art Unit: 2858

A. With respect to Claim 8, Kenda teaches the claimed instrumented anode (Col. 4, lines 50-51) measuring a current demand of cathodic area (Col. 1, lines 38-39) of a tank (Col. 1, lines 11-13; Col. 2, lines 60-61; #14), indicating an amount of current required to protect the tank (Col. 5, lines 45-47)

- 5 9. Claim 14 is rejected under 35 U.S.C §102 as being anticipated by Gurusamy (GB 2,224,852).

A. With respect to Claim 14, Gurusamy teaches the claimed half cell measuring a potential (p. 3, lines 23-25), the claimed anode measuring current demand (p. 3, lines 14-22)

10

CLAIM REJECTIONS - 35 U.S.C. §103

The following is a quotation of 35 U.S.C. §103(a) which forms the basis for all obviousness rejections set forth in this Office action:

15

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 28 and 29 are rejected under 35 U.S.C. §103(a) as being unpatentable over Gurusamy (GB 2,224,852).

20

A. With respect to Claims 28 and 29, Gurusamy teaches the claimed half cell measuring a potential (p. 4, lines 6-7), and the polarization (p. 9, lines 10-24), the claimed anode measuring current demand (p. 3, lines 14-22), wherein both the polarization and current indicate the amount of corrosion.

11. Claim 13 is rejected under 35 U.S.C. §103(a) as being unpatentable over Kenda
25 (5,547,311) in view of Sabins (4,107,017).

30

A. With respect to Claim 13, Kenda lacks the anode using ZHC-24 zinc. Sabins teaches that it is well known to use zinc anodes (Col. 3, line 50). One of ordinary skill in the art would have readily recognized the advantage and desirability to use zinc or any material which would promote corroding of the anode, and to promote protection from corrosion (Col. 3, lines 50-56).

Art Unit: 2858

12. Claims 2, 1, 28, 29 and 31 are rejected under 35 U.S.C. §103(a) as being unpatentable over Gurusamy (GB 2,224,852).

5 A. With respect to Claims 1, 2, 28, and 29, Gurusamy teaches the claimed half cell measuring a potential (p. 4, lines 6-7), and the polarization (p. 9, lines 10-24), the claimed anode measuring current demand (p. 3, lines 14-22), wherein both the polarization and current indicate the amount of corrosion. Gurusamy teaches measuring corrosion in material structures, such as concrete. To monitor a tank for corrosion is only one of numerous situations one of ordinary skill in the art would have found obvious for the purpose of preventing damage.

10 B. With respect to Claim 31, Gurusamy teaches estimating corrosion rates and estimating accurate and reliable forecasts concerning the safety of the structure in the future (p. 2, lines 10-14), considered to be scheduling tanks for maintenance.

REMARKS

15 Response to Arguments.

The following discussion is introduced in direct response to the arguments presented in the instant amendment:

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

20 **NEW PRIOR ART CITED**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References cited but not applied against the claims are considered to be of interest and should be carefully considered by the applicant.

25 Lange (EP 0 241 440) teaches a method for automatic surveillance of electrochemical metal structures by monitoring differences in electric potential between steel structure and at least one electrode, using corrosion and anodic or cathodic protection produces by current or sacrificial anodes.

Iimura (JP 05 142 140) teaches estimating the depth of corrosion by measuring current flow.

Art Unit: 2858

Kenda (5,547,311) teaches a system for cathodically protecting a structure that is in contact with soil.

Schwabe (6,261,439) teaches a cathodic protection system used to vary a current to protect a structure that is proportional to the measurement of the current.

- 5 Schiessl (5,051,355) teaches a corrosion measuring cell for measuring the depth of corrosion with a current monitoring device.

CONTACT INFORMATION

- 10 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine K. Oda whose telephone number is (703) 305-3857. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, N. Le, can be reached on (703) 308-0750.

- 15 Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center receptionist whose telephone number is (703) 308-0956. The Technology Center 2800 Customer Service Center can be reached at (703) 306-3329.

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- 20 CKO: cko
10 February 2003

Christine K. Oda
Christine K. Oda
Primary Examiner
Art Unit 2858